

between the electrode is required to be 2 to 4 time (4 mm to 8 mm) or larger of the mean-free-path at the maximum gas pressure 4.0 Pa.

IN THE CLAIMS:

14-18 / 23-24

Please **cancel** claims 1-27 without prejudice and disclaimer of the subject matter contained therein.

Please **add** claims 28-36 as follows:

- Re 11/26 32 28. A plasma processing apparatus comprising:
- a pair of electrodes opposite to each other having a gap between the electrodes between 8 mm and 50 mm;
 - an electrostatic attracting means for holding a sample onto one of said electrodes by an electrostatic attracting force;
 - a gas introducing means for introducing an etching gas into an environment holding said sample;
 - an evacuating means for evacuating and depressurizing said environment to a pressure condition of 0.5 Pa to 4.0 Pa;
 - a plasma generating means for forming said etching gas into a plasma under said pressure condition by a high frequency electric power of 30 MHz to 200 MHz;
 - and
 - a bias applying means for applying a bias voltage having a frequency of 500 KHz to 10 MHz to said one of said electrodes mounting said sample;
 - thus an insulator film in said sample being plasma processed.

- 33 29. A plasma processing apparatus according to claim 28, which further comprises:

a voltage suppressing means for suppressing a voltage rising generated by applying said bias voltage corresponding to an electrostatic attracting capacity of said electrostatic attracting means;

said voltage suppressing means setting a period of said bias voltage so that voltage change due to an electrostatic attracting film of said electrostatic attracting means during one cycle of said bias voltage is suppressed to one-half of said bias voltage.

Rel. 1.12.5
30. A plasma processing apparatus comprising a vacuum processing chamber, a sample table for mounting a sample to be processed in said vacuum processing chamber on one of a pair of electrodes having a gap between electrodes between 8 mm and 50 mm, and a plasma generating means including a high frequency electric power source, which further comprises:

an electrostatic attracting means for holding said sample onto said sample table by an electrostatic attracting force;

a bias applying means for applying a bias voltage having a frequency of 500 KHz to 10 MHz to said sample;

a radical generating plasma supplying means for forming a first gas for generating radicals at a pressure of more than 100 mTorr into a plasma in advance and for supplying a required amount of the radicals to said vacuum processing chamber; and

said plasma generating means for supplying a second gas which contains at least different molecules than the first gas for generating ions to said vacuum processing chamber and for generating a plasma in said vacuum processing chamber at a pressure of 50 mTorr or less;

wherein said high frequency electric power source applies a high frequency voltage of 30 MHz to 200 MHz, said vacuum processing chamber being depressurized to 0.5 Pa to 4.0 Pa.

35 31. An apparatus according to claim 28, further comprising a discharge confining ring, comprised of a semiconductor material or a conductor material located to surround said sample.

Re 36 32. An apparatus according to claim 28 further comprising a susceptible cover comprised of carbon or silicon located adjacent said one of said pair of electrodes.

37 33. An apparatus according to claim 32, wherein the susceptible cover has a thickness of 0.5 mm to 5 mm.

38 34. An apparatus according to claim 30, further comprising a discharge confining ring, comprised of a semiconductor material or a conductor material located to surround said sample.

39 35. An apparatus according to claim 30 further comprising a susceptible cover comprised of carbon or silicon located adjacent said one of said pair of electrodes.

40 36. An apparatus according to claim 35 wherein the susceptible cover has a thickness of 0.5 mm to 5 mm.